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ABSTRACT

Research in the field of alcohol abuse evidences a long history of attempts to predict outcome from alcohol treatment programs using situational and intrapsychic factors. To investigate whether alcohol reinforcement expectancies are related to drinking behavior, 42 male veteran graduates of an inpatient alcohol treatment program were interviewed 1 year after program completion. A significant resource person for each subject (wife, girlfriend, or family member) was also interviewed. The interviews involved an assessment of drinking behavior and social functioning. Expectancies were compared to traditional predictors of alcohol treatment outcome for effectiveness in predicting abstinence. An analysis of the results showed that low levels of stress, higher levels of social support, and living with family members were the best predictors of abstinence, accounting for 55% of the variance of the outcome measure. However, overall abstinence was best predicted by lower expectancies of relaxation/tension reduction from alcohol consumption. These findings suggest that the definition of outcome is an important consideration when examining treatment recommendations. (Author/BL)

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PREDICTING ALCOHOL TREATMENT OUTCOME: USING EXPECTANCY TO ENHANCE PREDICTION

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Abstract

Alcohol related expectancies vary with drinking patterns of adolescents and adults. The present study examined whether expectancies were related to drinking behavior of alcoholics at one year after treatment. Expectancies were compared to traditional predictors of alcohol treatment outcome for effectiveness in predicting to abstinence. Seventy-six percent of an alcohol treatment program sample (N = 42) were interviewed at one year after treatment. Multiple regression analyses accounted for 26% - 61% of criterion variance. Abstinence and abstinence or controlled drinking were best predicted by lower expectancies of relaxation/tension reduction.

Research in the field of alcohol abuse evidences a long history of attempts to predict outcome from alcohol treatment programs. Situational variables such as occupational status, stressful events and social support (1,2) have been employed in moderately successful predictive equations. Intrapsychic factors such as depression and personality variables have been added to this list of predictors (3,4). Reviews of predictive studies (2,4,5) yield inconsistent findings regarding the utility of these factors in the prediction of treatment outcome, in part because of the treatment population differences across studies and variable length of follow-up.

While experimental studies of the behavioral affects of alcohol have outlined a number of ways in which cognitive factors are involved in alcohol use (6), such factors have not, as of yet, been examined for their prognostic utility. One such dimension receiving considerable attention from both the theoretical and research vantages is that of expectancy. Alcohol expectancy refers to the anticipated effects of (reinforcement) from drinking (7). The expectation of alcohol ingestion has been demonstrated to play a causal role in aggressive (8) social (9,10), and sexual behavior (11,12) while drinking.

Further, research has demonstrated that expectancies vary with drinking patterns. Brown and her associates (7) report that in nonalcoholic adult populations heavier problematic drinkers intensify certain expectancies (e.g., sexual enhancement, arousal and power). Similarly, Christiansen and Goldman (13) note that abusive adolescent drinkers differ significantly from nonabusing peers in terms of their expectancies. Expectancies have been found to be correlated with prognotic ratings of success from alcohol treatment (14); however, to

date, expectations of reinforcement from alcohol have not been utilized in the prediction of actual post-treatment drinking behavior.

Alcohol expectancies may be useful predictors of treatment outcomes in two ways. First, if alcohol expectancies are generally more pronounced in the alcoholic population, then the overall amount of reinforcement anticipated from alcohol may yield predictive power in regards to treatment outcome. The research cited above, however, also suggests that in addition to the strength of anticipated reinforcement, specific expectancies may be more predictive of problematic drinking and perhaps drinking following the completion of an alcohol treatment program. Thus, from a general approach, it may be the strength of expectancies which is predictive of outcome following alcohol treatment or it may be that discriminably different expectancies have the most predictive utility regarding success.

Such a theoretical perspective has been supported in drug research on prediction of abuse. In particular, Sandava (15) reports that heavier use patterns co-vary with reported function (reasons) for drug use. Similarly, Bry, McKeon and Pandini (16) report a linear relationship between the number of risk factors and the extent of drug use and abuse among high school students. From this vantage a return to drinking may be seen as related to specific reinforcement rather than habit contribution factors.

The present study utilizes the most successful of the previously identified predictors of alcohol treatment outcome to assess whether alcohol reinforcement expectancies can increase prognostic efficiency. First, the prognostic utility of reinforcement expectencies will be tested. Alcohol expectancies will be independently employed to ascertain

their individual utility in predicting outcome at one year following participation in the alcohol treatment program. Second, expectancies are pitted against the best prediction composite available for the sample population in a multiple regression match. If reinforcement expectancies are not selected for the prediction equation, when all predictors are considered, then expectancy should not be added to the list of significant predictors of alcohol treatment outcome.

Method

Subjects

Forty-two male veteran graduates of the 28-day inpatient alcohol treatment program at the Veterans Administration Medical Center of San Diego, California, were contacted one year after completion of the program. The research participants and a significant other (resource person) were interviewed (N = 32) in person or in a phone interview (N = 2). Thus, personal contact was made with 76% of the original participants and overall 81% of the original subjects participated in the one year follow-up.

The follow-up subjects ranged in age from 28 to 66 years with a mean age of 48.8 and 97% were Caucasian. Since 19% of the original population that agreed to follow-up interviews were unable to be contacted in person or by phone, T-tests were conducted to examine any systematic biasing of the follow-up sample. The follow-up sample and original inpatient group did not significantly differ in terms of age, religious background, education, or ethnicity. Overall, the marital status of these two groups were comparable with the follow-up sample being compromised of 19% single, 22% married and 59% divorced, widowed or separated. Thus, the follow-up group appears to be a

representative sample of the participants in the original expectancy study.

Procedure

Subjects originally participated in the research project three weeks after entry into the inpatient Alcohol Treatment Program. Following screening for adequate reading level and prohibitive psychotic features, participants individually completed forms on demographic information, pretreatment drinking habits and drinking history and the Alcohol Expectancy Questionnaire (AEQ). The AEQ is a 90-item self-report questionnaire accessing six kinds of reinforcement from alcohol (see Brown, Goldman, Inn and Anderson, 1980 for details).

Subjects who agreed to participate in follow-up interviews were contacted initially by phone to arrange face-to-face appointments. Of the 42 subjects, initially agreeding to follow-up contact, eight were unable to be reached due to moving to a new location with no forwarding address, death, no phone or failure to respond to letters. In each case, attempts were made to interview a significant resource person (wife, girlfriend, family member of friend) using a structured interview format designed by Schuckit (17) and also in the home environment of the research participants.

Follow-up interviews involved an assessment of drinking behavior over the course of the preceding year as well as assessment of the participants functioning on a number of different dimensions (e.g., job, family, social, legal, medical, and financial). In cases of discrepancy between the reports of the patient and the resource person or when respondents are unable to answer precisely, the less successful of the two options considered was always selected. Thus, responses to the follow-up interview provided a conservative estimate of the

functioning of the research participants.

Predictors

Eight previously identified predictors of alcohol treatment outcome were selected for comparison with the alcohol expectancies. These predictors included continued participation in the after-care components of the treatment program, marital status, employment status, physical living environment, social living environment, social support, stress level and activities.

For each subject, six expectancy scores were calculated based on responses to the Alcohol Expectancy Questionnaire. The six expectancies measured were: 1) Global Positive Transformation of Experience, 2) Sexual Enhancement, 3) Physical and Social Pleasure, 4) Increased Assertiveness, 5) Tension Reduction and Relaxation, and 6) Arousal with Feelings of Power. Due to the limited number of subjects only the three best predictors were selected in each multiple regression analysis.

Definition of Outcome

For purposes of the present investigation, outcome from the Alcohol Treatment Program was defined in two ways. First, the multiple regression equations were established to determine the best predictors of year-long abstinence. The outcome predicted was the dichotomous variable measuring either 365 days of abstinence (success) or relapse at some point during the course of the year (failure). A second multiple regression series was conducted to predict the number of days during the year in which alcohol did not create problems. Thus, predictors were compared for their efficacy in estimating the actual number of days of abstinence or controlled drinking during the year (range from 0 to 365 days).

Results

A step-wise multiple regression analysis was conducted utilizing the eight traditional predictors of year-long abstinence following completion of the alcohol treatment program. Table 1 presents the results of the multiple regression analysis. Low levels of stress (β = -.783), higher levels of social support (β = .611) and living with family members (β = .338) were the best three background predictors of year long abstinence with the alcoholics involved in this study. These three predictors accounted for 55% of the overall variance of the outcome measure. An independent alchol expectancy multiple regression analysis was conducted on the outcome measure. Results of this analysis indicated that 58% of the overall variance could be accounted for by the expectancies of less tension reduction, increased social assertion and less social and physical pleasure (standardized regression coefficients of -.782, 458 and -.333, respectively). A third multiple regression analysis was conducted to predict continuous abstinence at one year. In this analysis, the three best predictors of abstinence were selected from the combined group of traditional variables and alcohol expectancies. When the multiple regression analysis selected the three best predictors from the combined predictor set, the Tension Reduction expectancy (β = .867), continued participation in aftercare (β = .241) and the Social Assertion expectancy (β = .241) were selected as the best predictors of year long abstinence accounting for a total of 61% of outcome variance.

Multiple regression analyses were also conducted to predict to an alternative, less rigorous definition of success at one year following treatment. In these multiple regression equations, success

was defined as the number of days of either abstinence or drinking in a controlled fashion without a return to abusive drinking patterns. In this situation, marital status (β = .254), employment status (β = .269) and social living environment (β = .263) were defined as the best traditional predictors of success following alcohol treatment. Utilizing only the three best traditional predictors, the multiple regression equation achieved a multiple R of .529, thus accounting for 28% of the overall variance. Alcohol expectancies which were selected as the optional predictors of abstinence or controlled drinking during the year included: Tension Reduction expectancy (β = -.531), Global Positive Changes (β = .268) and Sexual Enhancement (β = .426). When the multiple regression equation was left free to select optimal predictors from both alcohol expectancies and traditional predictors, the tension reduction expectancy (β = .426), physical living environment (β = .250) and marital status (β = .242) were selected via the statistical procedure. The combined predictors achieved a multiple R of .605, thereby accounting for 37% of the overall outcome variance.

Conclusions

The results of the present study demonstrate that alcohol expectancies rival traditional variables in the prediction of success following alcohol treatment. In particular, the expectancy of tension reduction was the most powerful predictor of abstinence (r = .710) and abstinence or controlled drinking (r = .432). The joint consideration of expectancies and traditional variables was found to increase the predictability of success following alcohol treatment.

In terms of long term abstinence, the present study suggests that

combined effects of a stressful or nonsupportive environment and use of alcohol for tension reduction purposes place the alcoholic at particular risk for relapse. Different predictors were selected when comparing abstinence with abstinence or controlled drinking as the optimal outcome for treatment. While the expectancy of relaxation and tension reduction remained the prominent predictor in both of these situations, the optimal traditional predictor measures varied. This suggests that definition of outcome or success of treatment is an important consideration when examining or making treatment recommendations for those currently in treatment programs.

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Table 1

Prediction of Year Long Abstinence

Predictor Variables	Successive Multiple Rs	Beta	F Statistic
Alcohol Expectancies			
Relaxation and Tension Reduction	.710	-.782	30.479
Increased Social Assertion	.739	.458	17.469
Social and Physical Pleasure	.762	-.333	12.902
Traditional Predictors			
Stress	.387	-.783	5.292
Social Support	.664	.611	11.446
Social Living Environment	.741	.338	11.377
Combined Predictors			
Relaxation and Tension Reduction Expectancy	.710	-.867	3.479
Aftercare Participation	.759	.247	19.762
Social Assertion Expectancy	.778	.241	14.345

*In order of stepwise inclusion in multiple regression equation

Table 2

Prediction of Abstinence or Controlled Drinking During the Year

Predictor Variables	Successive Multiple Rs	Beta	F Statistics
Alcohol Expectancies			
Relaxation and Tension Reduction	.472	-.531	8.583
Global Positive Transformation of Experience	.486	.268	4.491
Sexual Enhancement	.506	-.203	3.204
Traditional Predictors			
Marital Status	.388	.254	5.321
Employment Status	.465	.269	3.996
Social Living Environment	.529	.263	3.619
Combined Predictors			
Relaxation and Tension Reduction	.472	-.426	8.583
Physical Living Environment	.560	.250	6.613
Marital Status	.605	.242	5.397

*In order to stepwise inclusion in multiple regressin equation